

REMARKS

In accordance with the foregoing, no new matter is presented in this Amendment. Claim 1 has been amended, claim 4 has been cancelled without prejudice or disclaimer, and claims 1-3 and 5-7 are pending and under consideration. Reconsideration is requested.

REJECTIONS UNDER 35 U.S.C. §102:

In the Office Action on page 2, the Examiner rejects claims 1, 2, 4 and 6 under 35 U.S.C. §102(b) as being anticipated by Nomura et al., "Super-resolution read only memory disk with metal nanoparticles or small aperture," Jap. J. Appl. Phys. Pt 1, vol.41 (3B) pp. 1876-1879 (March/2002) (hereinafter Nomura et al.). In support of this rejection, the Examiner asserts that Nomura et al. discloses,

"A polycarbonate disk with pits having a depth of 50 nm and lengths of 0.2-0.4 microns is provided with a reflective layer, followed by either GR-1 (Ag particles are 5 nm in silicon dioxide), or GR-2 (where the Ag particles are 10 nm in silicon dioxide) over coated with a dielectric layer to prevent the GR layer from mixing with the UV curable layer (section 2.3 and 2.1). The provision of a dielectric layer between the reflective layer and the GR layer is disclosed on page 1878, left column. The reversal of the order of the reflective and GR layer is discussed with respect to figure 8 and appears to have no effect."

The rejection is respectfully traversed and the rejection should be withdrawn for the following reasons.

The rule under 35 U.S.C. §102 is well settled that anticipation requires that each and every element of the claimed invention be disclosed in a single prior art reference. In re Paulsen, 30 F.3d 1475, 31 USPQ2d 1671 (Fed. Cir. 1994); In re Spada, 911 F.2d 705, 15 USPQ2d 1655 (Fed. Cir. 1990). Those elements must either be inherent or disclosed expressly and must be arranged as in the claim. Richardson v. Suzuki Motor Co., 868 F.2d 1226, 9 USPQ2d 1913 (Fed. Cir. 1989); Constant v. Advanced Micro-Devices, Inc., 848 F.2d 1560, 7 USPQ2d 1057 (Fed. Cir. 1988); Verdegall Bros., Inc. v. Union Oil Co., 814 F.2d 628, 2 USPQ2d 1051 (Fed. Cir. 1987). In addition, the prior art reference must be enabling. Akzo N.V. v. U.S. International Trade Commission, 808 F.2d 1471, 1479, 1 USPQ2d 1241, 1245 (Fed. Cir. 1986), cert. denied, 482 U.S. 909 (1987). The corollary of that rule is that absence from the reference of any claimed element negates anticipation. Kloster Speedsteel AB v. Crucible Inc., 793 F.2d 1565, 230 USPQ2d 81 (Fed. Cir. 1986). The burden of establishing a basis for denying patentability of a claimed invention rests upon the Examiner.

In the present situation, the Examiner has not explained how Nomura et al. discloses each and every element as defined in Applicants' claims 1, 2, 4 and 6. The claimed invention in Figure 2 of the present application demonstrates an improvement over the prior art in Figure 1 of the present application as shown in Figure 3 of the present application where the Experimental results show a greater than 40dB CNR for a pit length of 250 nm as opposed to a lower CNR of less than 36dB for a greater pit size of 260 nm in Figure 6 of the Nomura et al. reference (p. 1878). In this regard, the Nomura et al. reference illustrates the prior art. A feature of the present invention that are clearly distinguishable over the Nomura et al. reference is the fine metal particle composition. In the Nomura et al. reference, fine silver (Ag) particles are embedded in an insulating layer (section 2.1, p. 1876). As recited in amended claim 1, the metal particles are derived from gold, platinum, rhodium, palladium, or a mixture thereof, as the fine metal particles in a mixture of a dielectric material as a mask layer. In regard to these distinguishing elements and further, in regard to the improved performance of the present invention, claim 1 has been amended, claim 4 has been cancelled. For example, amended base claim 1 defines a high-density readable only optical disk, comprising:

- a substrate with pits; and
- at least one mask layer with a super resolution near field structure, the at least one mask layer comprising a mixture of a dielectric material and metal particles, wherein the metal particles are derived from gold, platinum, rhodium, palladium, or a mixture thereof.

Nowhere in Nomura et al. is there any disclosure of the recited features of Applicants' amended base claim 1. Similarly, claims 2 and 6 which depend from base claim 1 are not anticipated by Nomura et al. Nomura et al. discloses, "The GR film, in which ultrafine particles are embedded in an insulating matrix, was prepared by sputtering using a SiO₂ target (6 inch) and Ag chips (5 x 5 mm). The size of the Ag nanoparticles was controlled by the number of Ag chips." (Section 2.1, p. 1876). Nomura et al. does not disclose any other materials for the ultrafine particles.

In view of these amendments, where amended independent claim 1 recites metal particles other than silver, and is believed to distinguish over Nomura et al., it is respectfully requested the claims be put in position of allowance.

REJECTIONS UNDER 35 U.S.C. §103:

In the Office Action on page 3, the Examiner rejects claims 1, 2, 4 and 6-7 under 35

U.S.C. §103(a) as being unpatentable over Nomura et al. The rejection is respectfully traversed and reconsideration is requested for at least the following reasons.

In support of this rejection, the Examiner states:

"It would have been obvious to one skilled in the art to modify the example of substrate/silicon/ZnS-SiO₂/GR by adding a dielectric layer and UV curable layer to provide protection while preventing mixing of the GR and UV curable layer with a reasonable expectation of forming a useful optical recording medium having similar performance to that of the example of substrate/silicon/ZnS-SiO₂/GR."

As a general matter, in order to establish a prima facie obviousness rejection, the Examiner needs to provide both the existence of individual elements corresponding to the recited limitations, and a motivation to combine the individual elements in order to create the recited invention. Both the individual elements and the motivation need to be shown to have existed in the prior art. Should the Examiner fail to provide evidence that either one of the individual elements or the motivation does not exist in the prior art, then the Examiner has not provided sufficient evidence to maintain a prima facie obviousness rejection of the claim. MPEP 2143.03. Thus, the burden is initially on the Examiner to provide evidence as to why one of ordinary skill in the art would have been motivated to combine the individual elements to create the recited invention, and to demonstrate that this evidence existed in the prior art. MPEP 2143.01. As stated above, the reference does not provide all of the individual elements of the recited limitations. In addition, assuming arguendo that the Examiner provided the individual elements of the recited limitations, the Examiner has failed to provide a motivation to combine the individual elements from the prior art.

Nomura et al. discloses the ZnS-SiO₂ layer to keep a thermochromic film from mixing with a UV resin. There is no indication of a motivation to use the ZnS-SiO₂ layer to separate another type of film from a UV layer in the Nomura et al. reference. As there is no proof of a motivation to utilize ZnS-SiO₂ layer to separate another type of film from a UV layer in Nomura et al. in high-density readable only optical disk, it is respectfully submitted that there is insufficient evidence of a motivation to combine these features to support a prima facie argument for an obviousness rejection of claims 1, 2, 4 and 6-7. In addition, an aspect of the claimed invention in the present application is a demonstrated improvement over the prior art where the Experimental results show a greater than 40dB CNR for a pit length of 250 nm (Figure 3) as opposed to a lower CNR of less than 36dB for a greater pit size of 260 nm of the Nomura et al. reference (Figure 6, p. 1878).

In the Office Action on pages 3 and 4, the Examiner rejects claims 1-4 and 6-7 under 35 U.S.C. §103(a) as being unpatentable over Nomura et al., in view of Nomura et al. (JP 2002-133720). In support of this rejection the Examiner states:

“In addition to the basis provided above the examiner holds that it would have been obvious to modify the media anticipated or rendered obvious by Nomura et al, by using other dielectric materials and/or metal particles such as those disclosed by Nomura et al. JP 2002-133720 in place of the SiO₂-Ag near field enhancing layer of Nomura et al., with a reasonable expectation of forming a useful optical recording medium having similar performance to that of the example of substrate/silicon/ZnS-SiO₂/GR.”

This rejection is respectfully traversed and reconsideration is requested for at least the following reasons.

As set forth immediately above, and as noted by MPEP 2143.01, an unsubstantiated statement that existing elements could be combined as it was in the skill of the art to do so does not provide a basis for a rejection under 35 U.S.C. 103(a). Instead, in order to establish a prima facie case for obviousness, the rejection must detail the existence of the individual elements at the time of invention, that there was an existing motivation to combine these elements contained in the then existing art, and that this motivation is beyond an unsupported statement that the combination of these elements was within the skill of the art. In essence, there needs to be proof that such a motivation exists, not conjecture. This rigorous proof is required in order to prevent the trap of impermissible hindsight. Regardless of whether the each and every element of the Applicants' claimed invention are disclosed in a combination of these prior art references, the Examiner fails to state a motivation to combine the stated elements. Thus, the burden is initially on the Examiner to provide evidence as to why one of ordinary skill in the art would have been motivated to combine the individual elements to create the recited invention, and to demonstrate that this evidence existed in the prior art.

It is respectfully submitted that there is insufficient evidence in the cited references of a motivation to combine the features of Nomura et al. and Nomura et al. JP 2002-133720 to support a prima facie argument for an obviousness rejection of claims 1-4 and 6-7. In addition, an aspect of the claimed invention is a demonstrated improvement in performance over the prior art where the Experimental results show a greater than 40dB CNR for a pit length of 250 nm (Figure 3) as opposed to a lower CNR of less than 36dB for a greater pit size of 260 nm of the Nomura et al. reference (Figure 6, p. 1878).

On pages 4 and 5 of the Office Action, the Examiner rejects claims 1-7 under 35 U.S.C.

§103(a) as being unpatentable over Nomura et al., in view of Nomura et al. (JP 2002-133720), further in view of either of Ashida et al. (JP 11-213447), Yuzusu et al. (JP 10-106027) or Naruse et al. (JP 06-295471). In support of this rejection the Examiner states:

“In addition to the basis provided above the examiner holds that it would have been obvious to modify the media anticipated or rendered obvious by the combination of Nomura et al., with Nomura et al. JP 2002-133720 by using other dielectric materials and/or metal particles such as the Pd, Pt or the like disclosed by either of Ashida et al. JP 11-213447, Yuzusu et al. JP 10-106027 or Naruse et al. JP 06-295471 in place of the SiO₂-Ag near field enhancing layer of Nomura et al., with a reasonable expectation of forming a useful optical recording medium having similar performance to that of the example of substrate/ZnS-SiO₂/GR.”

This rejection is respectfully traversed and reconsideration is requested for at least the following reasons.

While the Examiner concludes that a reasonable expectation of success can be assumed by using other materials this conclusion assumes the result and does not explain why one skilled in the art would utilize the recited materials instead of or in addition to the materials actually suggested in Nomura et al. Something more than conclusory statements by the Examiner are required to demonstrate a motivation to combine existed in the prior art at the time of invention. Assuming *arguendo* that each and every element of the claimed invention is disclosed in the cited prior art references, the Examiner has not provided evidence from the prior art that a motivation then existed to make the combination as is required to maintain a rejection based, in part, on combination. As noted by the Federal Circuit in In re Dembiczak, 50 USPQ2d 1614. It is respectfully submitted that there is insufficient evidence in the cited references of a motivation to combine the features of Nomura et al. and Nomura et al. JP 2002-133720 further in view of either of Ashida et al. JP 11-213447, Yuzusu et al. JP 10-106027 or Naruse et al. JP 06-295471, to support a *prima facie* argument for an obviousness rejection of claims 1-7. Additionally, an aspect of the claimed invention is a demonstrated improvement in performance over the prior art where the Experimental results show a greater than 40dB CNR for a pit length of 250 nm (Figure 3) as opposed to a lower CNR of less than 36dB for a greater pit size of 260 nm of the Nomura et al. reference (Figure 6, p. 1878).

In the Office Action on page 5, the Examiner rejects claims 1-7 under 35 U.S.C. §103(a) as being unpatentable over Nomura et al., “Super-resolution read only memory disk with metal nanoparticles or small aperture,” Jap. J. Appl. Phys. Pt 1, vol.41 (3B) pp. 1876-1879 (March/2002), in view of Tseng et al. '455. As a point of clarification, the instant application is based on Korean patent application no. 2002-59139, which was filed September 28, 2002 in the

Korean Intellectual Property Office. A certified copy of Korean patent application no. 2002-59139 was filed in the United States Patent and Trademark Office as acknowledged by the Examiner on page 1 of the Office Action. Further, enclosed are English translations of Korean patent application no. 2002-59139, and Korean patent application no. 2003-49132, along with statements from the translator in compliance with 37 CFR 1.55(a)(4). As such, it is respectfully submitted that the applicants have established a date of invention of at least September 28, 2002. MPEP 201.15. Since Tseng et al. has a U.S. filing date of September 4, 2003, it is respectfully submitted that Tseng et al. is not available as prior art under 35 U.S.C. §102(e)(1) since Tseng et al. was not filed in the United States prior to the applicants' invention. MPEP 706.02(b). Since Tseng et al. does not appear to otherwise qualify as prior art, it is respectfully requested that the Examiner withdraw the rejection of claims 1-7 in view of Tseng et al.

Based on the foregoing, this rejection is respectfully requested to be withdrawn.

DOUBLE PATENTING

In the Office Action on pages 6 and 7, the Examiner provisionally rejected claims 1-7 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-32 of U.S. Patent Application 10/944,421 (U.S. 2005/0079313). Since claims 1-7 of the instant application have not yet been indicated as allowable, it is believed that any submission of a Terminal Disclaimer or arguments as to the non-obvious nature of the claims would be premature. MPEP 804(I)(B). As such, it is respectfully requested that the applicant be allowed to address any obviousness-type double patenting issues remaining once the rejection of the claims under 35 U.S.C. §§102 and 103 is resolved and that the rejection be reconsidered in light of the claims presented above.

CONCLUSION:

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 503333.


Serial No. 10/671,865

Docket No. 1793.1035

Respectfully submitted,

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